WHAT IS CLAIMED IS:

1. A system for orbitally welding thin-walled tubing, said system comprising:

a plurality of clamping blocks configured to hold said tubing while said tubing is trimmed, and orbitally welded;

at least one tooling plate configured to have said clamping blocks mounted thereto such that said tubing is attached to said tooling plate and aligned to be net length trimmed; and

a welding cassette configured to retain said clamping blocks and align said tubing during orbital welding.

2. The system of Claim 1 wherein said tooling plate comprises:

at least one tubing identification number for identifying a specific piece of tubing to be attached to said tooling plate; and

at least one tubing outline configured to indicate a position of said identified tubing on said tooling plate and locate said tubing for net length trimming.

3 The system of Claim 1 wherein said tooling plate comprises:

a plurality of bullet nose pins configured to position said clamping blocks on said tooling plate; and

a plurality of connector receptors configured to mount said clamping blocks on said tooling plate.

4. The system of Claim 1 wherein said clamping blocks each comprise:

a bottom half comprising a plurality of bullet nose receivers configured to position said bottom half on said tooling plate, said bottom half coupled to said mounting plate using a plurality of connectors; and

a top half configured to be coupled to said bottom half after said tubing is cradled in said bottom half, thereby clamping said tubing between said bottom half and said top half.

5. The system of Claim 4 wherein at least one each said bottom half and each said top half further comprises a clocking slot configured to rotationally orient said tubing in a desired position during orbital welding.

6. The system of Claim 1 wherein said welding cassette comprises:

a first half configured to receive an orbital welding head and a pair of clamping blocks, each said clamping block holding a respective piece of tubing; and

a second half hingedly connected to said first half such that said second half can be placed in an open position to allow said first half to receive said clamping blocks, and further placed in a closed position thereby enclosing the welding head and retaining said clamping blocks in a fixed position within said welding cassette.

7. The system of Claim 6 wherein said first half comprises;

a plurality of clocking pins configured to rotationally orient said tubing in a desired position for orbital welding; and

a plurality of retaining devices configured to hold said pair of clamping blocks in said welding cassette, thereby positioning and aligning said respective pieces of tubing adjacent each other during orbital welding.

8. The system of Claim 1 wherein said clamping blocks are further configured to retain said tubing in a desired circumferential shape while being trimmed and orbitally welded.

9. The system of Claim 1 further comprising a cutting machine configured to:

utilize said clamping blocks to hold said tubing in a desired position during cutting; and

cut said tubing such that deburring is not needed.

10. A method for cutting and orbitally welding thin-walled tubing using a system including a plurality of clamping blocks, at least one tooling plate and a welding cassette, said method comprises;

clamping the tubing in the clamping blocks;

cutting the tubing to a desired length while the tubing remains clamped in the clamping blocks; and

orbitally welding mating pieces of the tubing while the tubing remains clamped in the clamping blocks.

11. The method of Claim 10 wherein the clamping blocks include a top half and a bottom half, each bottom half having a plurality of bullet nose receivers, the tooling plate includes a plurality of bullet nose pins and connector receptors, and wherein clamping the tubing in the clamping blocks comprises:

positioning the bottom half of each of the clamping blocks on the tooling plate utilizing the bullet nose pins and the bullet nose receivers;

coupling the bottom half of each of the clamping blocks to the tooling plate utilizing a plurality of connectors and the connector receptors;

cradling a piece of tubing in each bottom half; and

coupling the top halves to the bottom halves, thereby clamping the piece of tubing between the bottom halves and the top halves.

12. The method of Claim 11 wherein cutting the tubing to a desired length comprises:

removing the clamping blocks from the tool plate while the tubing remains clamped in the clamping blocks;

mounting one clamping block in a cutting machine; and

utilizing the cutting machine to cut the tubing adjacent the clamping block such that deburring is not needed.

13 The method of Claim 10 wherein the welding cassette includes a first half and a second half hingedly connected to the first half such that the second half is pivotal between an open position and a closed position, and wherein orbitally welding comprises placing the second half in the open position.

14. The method of Claim 13 wherein at least one of the bottom half and the top half of each clamping block further includes a clocking slot and the first half of the welding cassette includes a plurality of clocking pins, a pair of sidewalls, and a plurality of retaining devices, and wherein orbitally welding further comprises:

placing a pair of clamping blocks adjacent each other between the retaining devices and the side walls such that the tubing clamped in each respective clamping block is held perpendicular to an axis of travel of an orbital

welding head tungsten tip, and such that a joint to be welded is centered under the tungsten tip; and

mating the clocking slot of each of the clamping blocks with a clocking pin, thereby rotationally orienting each clamping block about the axis of travel the tungsten tip.

15 The method of Claim 14 wherein orbitally welding further comprises:

placing the second half in the closed position such that the pair of clamping blocks are enclosed adjacent each other in the welding cassette; and

welding the pieces of tubing together in the desired position and alignment utilizing the orbital welding head.

16. The method of Claim 10 wherein the method further comprises retaining the tubing in a desired circumferential shape while being trimmed and orbitally welded utilizing the clamping blocks.

17. A system for cutting and orbitally welding thin-walled tubing, said system comprising:

at least one tooling plate comprising a plurality of bullet nose pins and connector receptors, said tooling plate configured to align said tubing for net length trimming;

a plurality of clamping blocks each comprising a bottom half and a top half, each said bottom half having a plurality of bullet nose receivers that mate with said bullet nose pins to position said bottom halves on said tooling plate, each said bottom half coupled to said mounting plate using a plurality of connectors interlocked with said connector receptors, and said top halves configured to be coupled to said bottom halves after said tubing is cradled in said bottom halves, thereby clamping said tubing between said bottom halves and said top halves and aligning said tubing to be net length trimmed, said clamping block configured to be removed from said tooling plate while remaining clamped on said tubing and to continue to hold said tubing while said tubing is trimmed, and orbitally welded; and

a welding cassette comprising a first half and a second half, said first half configured to receive an orbital welding head and comprising a plurality of retaining devices configured to hold a pair of said clamping blocks between said retaining devices and a pair of sidewalls of said first half, said second half hingedly connected to said first half such that said second half can be placed in

an open position to allow said pair of clamping blocks to be inserted between said retaining devices and said sidewalls, and further placed in a closed position to retain said pair of clamping blocks within said welding cassette such that said tubing clamped in said clamping blocks is aligned perpendicular to a direction of travel a tungsten tip of said orbital welding head, and such that a weld joint between said tubing is centered under said tungsten tip.

18. The system of Claim 17 wherein at least one of each said bottom half and each said top half of said clamping block further comprises a clocking slot, and said first half of said welding cassette comprises a plurality of clocking pins such that engagement of said clocking slot of each said clamping block with one of said clocking pins rotationally orients said respective pieces of tubing in a desired position during orbital welding.

19. The system of Claim 17 wherein said clamping blocks are further configured to retain said tubing in a desired circumferential shape while being net length trimmed, and orbitally welded.

20. The system of Claim 17 further comprising a cutting machine configured to utilize said clamping blocks to hold said tubing in a desired position during cutting and to cut said tubing such that deburring is not needed.

21. A system for orbitally welding thin-walled tubing, said system comprising:

a plurality of clamping blocks configured to clamp onto and hold a pair of lengths of tubing, each of said welding blocks including a first positioning system;

a welding cassette having a pair of second positioning systems for cooperating with said first positioning systems to precisely align said lengths of tubing relative to each other, and to an orbital welding head disposed adjacent said welding cassette, when said lengths of tubing are positioned in said welding cassette, thereby enabling said lengths of tubing to be orbitally welded to one another.

22. The system of Claim 21 wherein said first positioning system comprises a clocking slot, and said pair of second positioning systems comprises a pair of clocking pins.